

The Power of Global Collaboration
Defense | Government | Industry | Academia

Looking Ahead: The ADL Initiative in 2013

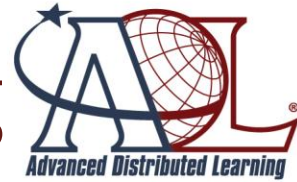
31 January 2013

Mr. Dean Marvin, Director of Operations, ADL (Orlando)

Katmai Support Services Contractor for ADL

Mr. Jonathan Poltrack, Director of Operations, ADL (Alexandria)

Problem Solutions Contractor for ADL

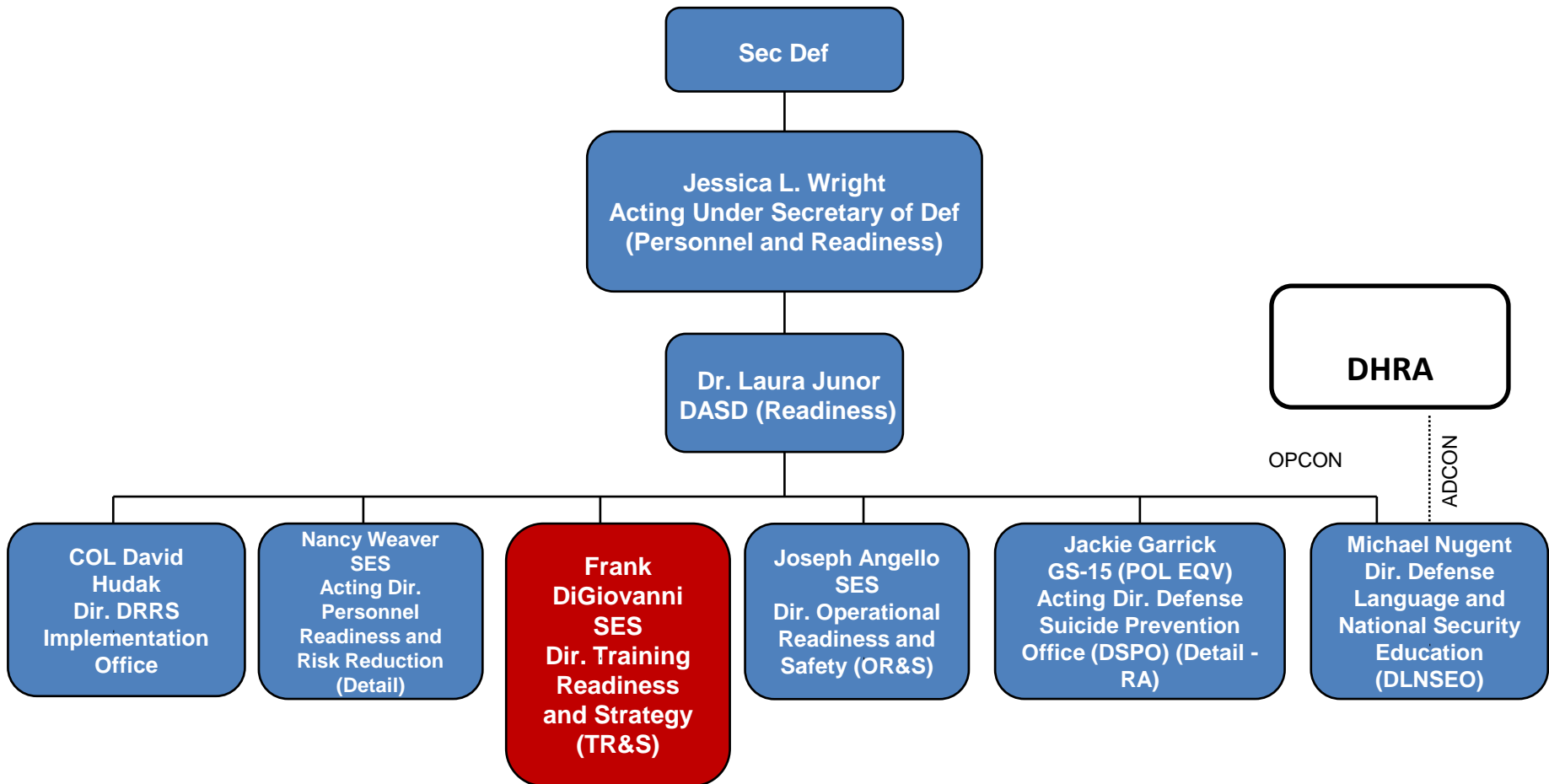
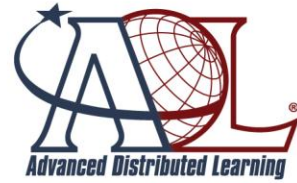


ADL Initiative was established in 1999 by Presidential Executive Order 13111. The first two ADL Co-Labs opened in Alexandria, VA and Orlando, FL that same year.

ADL Vision: “Provide access to the highest quality education and training, *tailored to individual needs*, delivered cost effectively, anywhere and anytime.”

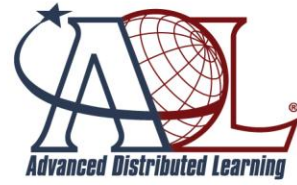


Readiness: Organization and Structure





Achieving the ADL Vision

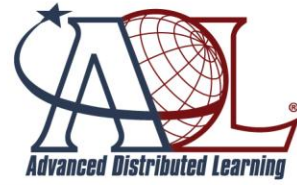


- Provide Policy: DoDI 1322.26, "Developing, Managing, and Delivering Distributed Learning Content"
- Conduct R&D towards the next generation learning environment.
- Provide Guidelines, Best Practices, and Tools and other assistance for the implementation of ADL across DoD and other government organizations.
- Provide Open dialogue with the Services and other DoD agencies through the Defense ADL Action Team (DADLAT).





FY 2012 e-Learning



- Army
 - Enrollments: 10,729,364
 - Completions: 4,979,856
- Navy
 - Enrollments: 4,584,763
 - Completions: 3,836,602
- USMC
 - Enrollments: 4,071,356
 - Completions: 1,761,857
- Air Force
 - Enrollments: 9,787,100
 - Completions: 9,130,440

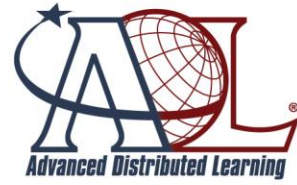
Total Service Completions
20,424,374

Plus

Joint Service Completions
1,200,000



ADL Global Reach

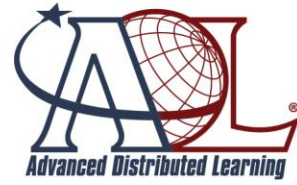


Four U.S. and Eight International Sites





Next Gen “SCORM”



**Access From
Any Device**



**Personalized and
Brokered
Content**

- Just-in-Time
- Just-for-You



Learn From:

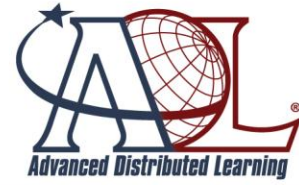
- Intelligent Tutors
- Mentors and peers via social networks
- Self-Discovery

Learn Using:

- Games
- Virtual Worlds
- Intelligent content



The Future



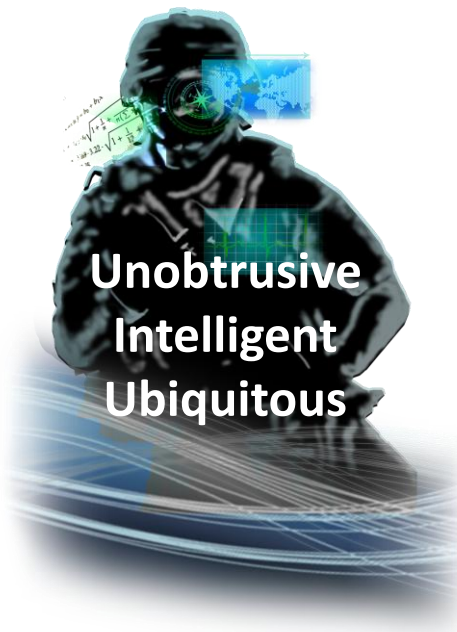
Personal Assistant for Learning

*Sharing information
across multiple platforms*

Networked to facilitate
mentoring and peer-to-
peer communications

**Integrated Artificial
Intelligence (AI)
System**

Dynamic Learner models
for individuals and teams



**Unobtrusive
Intelligent
Ubiquitous**

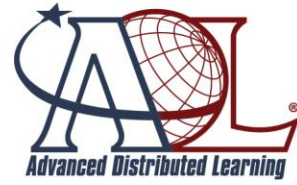
*Personalized to the
individual*

Transparent interface to
enhance user experience

**Assess and track learner
performance
Anytime & Anywhere**



Virtual World Framework

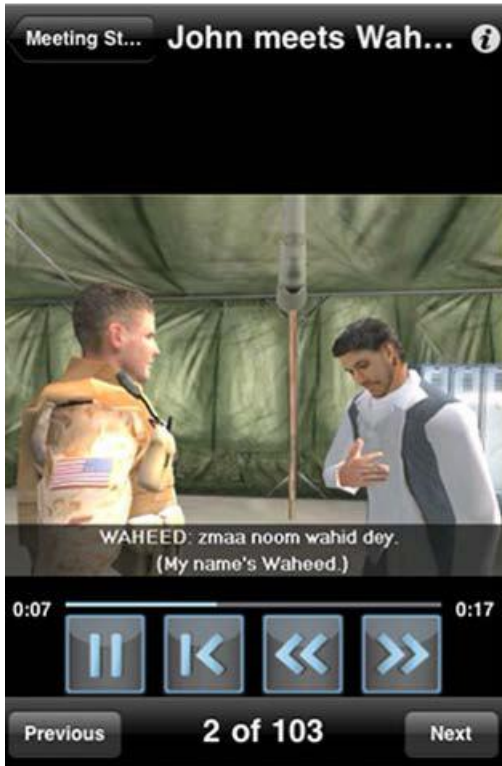
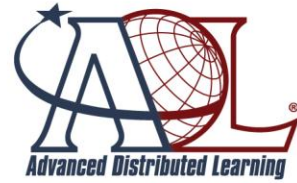


- A fast, light-weight web-based architecture for creating collaborative virtual spaces
- Author simulations without installing software
- Access training content from anywhere, on any device
- Persistent worlds can evolve over time as content is added
- Collaborative design tools
- Open source
- Integrated with other ADL products





Mobile Learning



Language & Culture



eBooks

ADL Resources

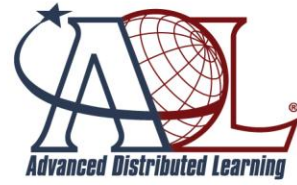
Mobile Learning Handbook
<http://mlhandbook.adlnet.gov>

ADL Mobile Newsletter
<http://ml.adlnet.gov>

ADL Mobile Learning Guide
<http://apps.usa.gov/adl-mlearning-guide/>



Mobile Learning, cont'd



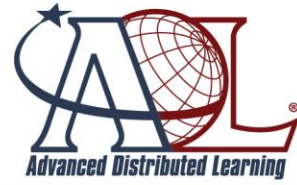
Job performance aiding

Checklists





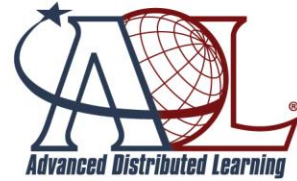
Transmedia Learning



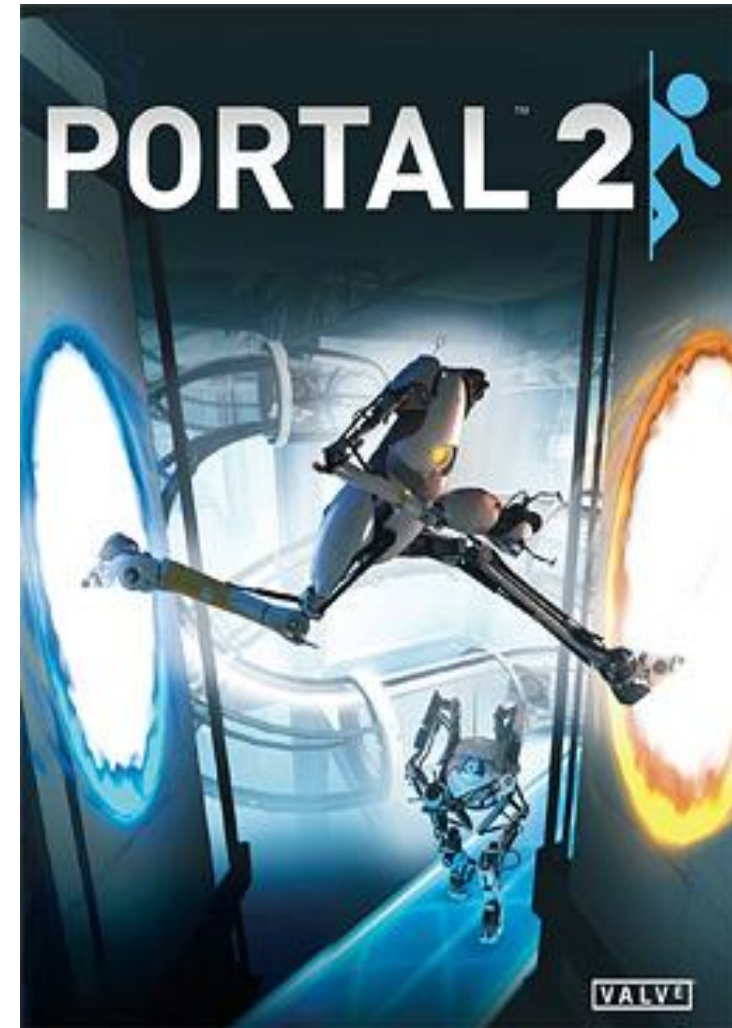
Transmedia Learning is the purposeful, coordinated, and strategic use of multiple media to relate a single, coherent story or narrative as it unfolds over time to engage new audience members or keep an audience engaged.

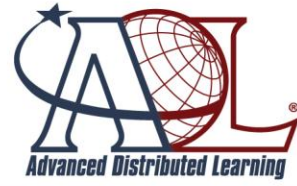


Cognitive Adaptability Research



- “Adaptability” is the ability to use existing knowledge to create innovative problem solutions
- Game Study: To better understand how game design affects cognitive adaptability
- To better understand cognitive adaptability within game design and further the development of game evaluation guidelines and serious game design tenets.



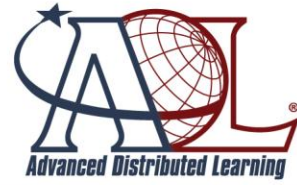


An Overview of Technical Projects

2013



Training & Learning Architecture (TLA)

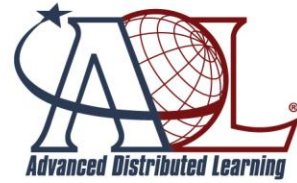


TLA

- Experience Tracking
- Content Brokering
- Learner Profiles
- Competency Networks



70/20/10 Model



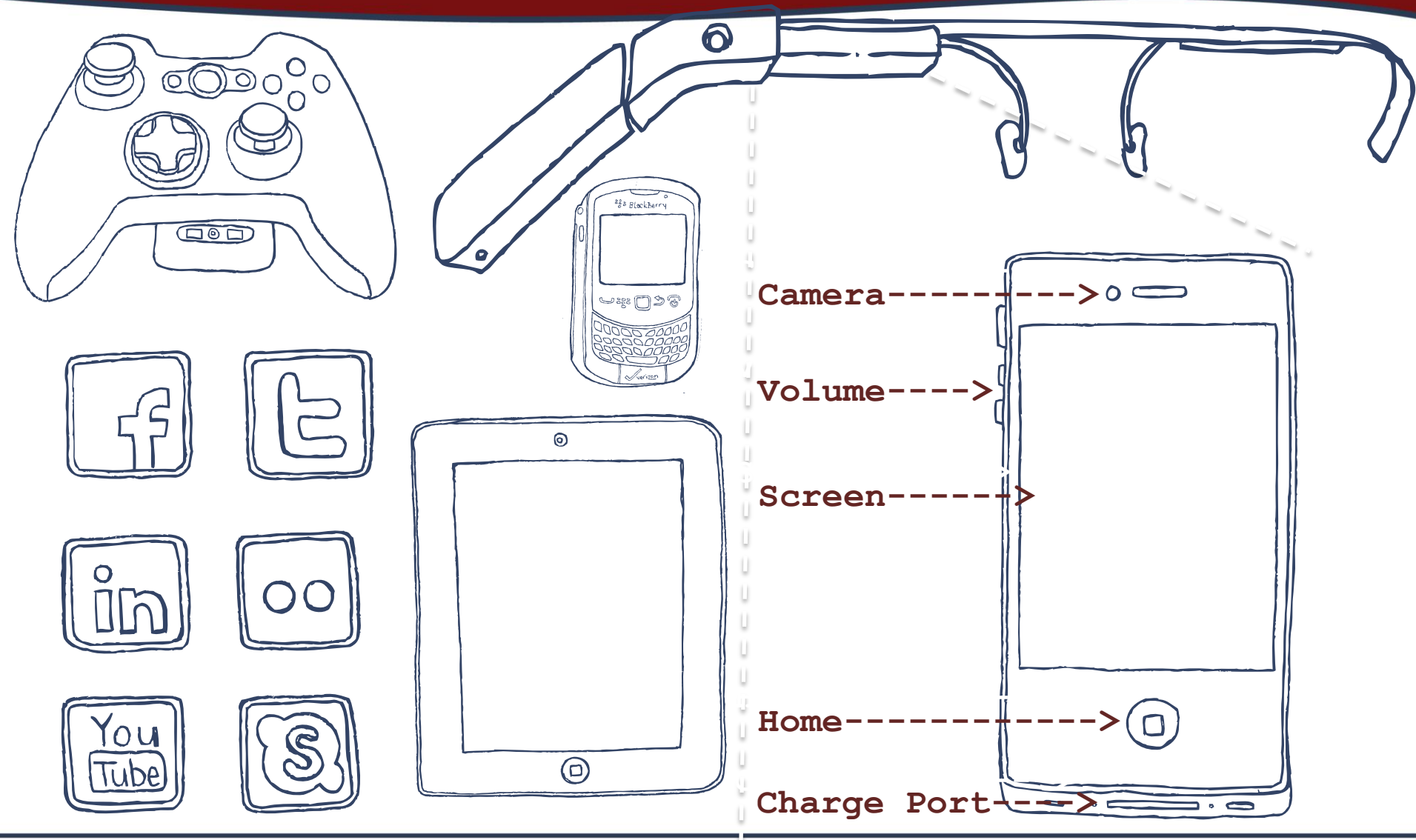
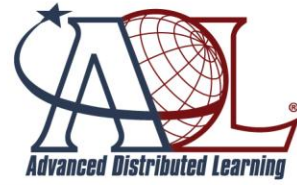
Educational development is:

- about 70% from on-the-job experiences, tasks and problem solving
- about 20% from feedback and from working around good or bad examples of the need
- about 10% from formal courses

Current technologies only focus on the 10%



Moving Toward the 90%



The Service-Based Approach



DIGITAL GOVERNMENT:
**BUILDING A 21ST
CENTURY PLATFORM
TO BETTER SERVE THE
AMERICAN PEOPLE**

MAY 23, 2012

“I want us to ask ourselves every day, how are we using technology to make a real difference in people’s lives.”

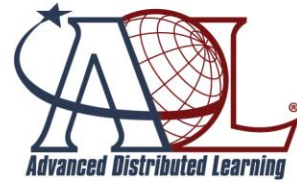
—President Barack Obama

The Speed of Digital Information

When a 5.9 earthquake hit near Richmond, Virginia on August 23rd, 2011, residents in New York City read about the quake on Twitter feeds 30 seconds before they experienced the quake themselves.



Web Service Benefits



- **Interoperability** – Works with any programming language while providing non-proprietary solution due to standards-based communications
- **Usability** – Exposes logic over the web that can be used instead of reinvented
- **Reusability** – Easy to reuse common tasks without duplication of code
- **Deployability**– Leverages standard Internet technologies



Open Source Benefits



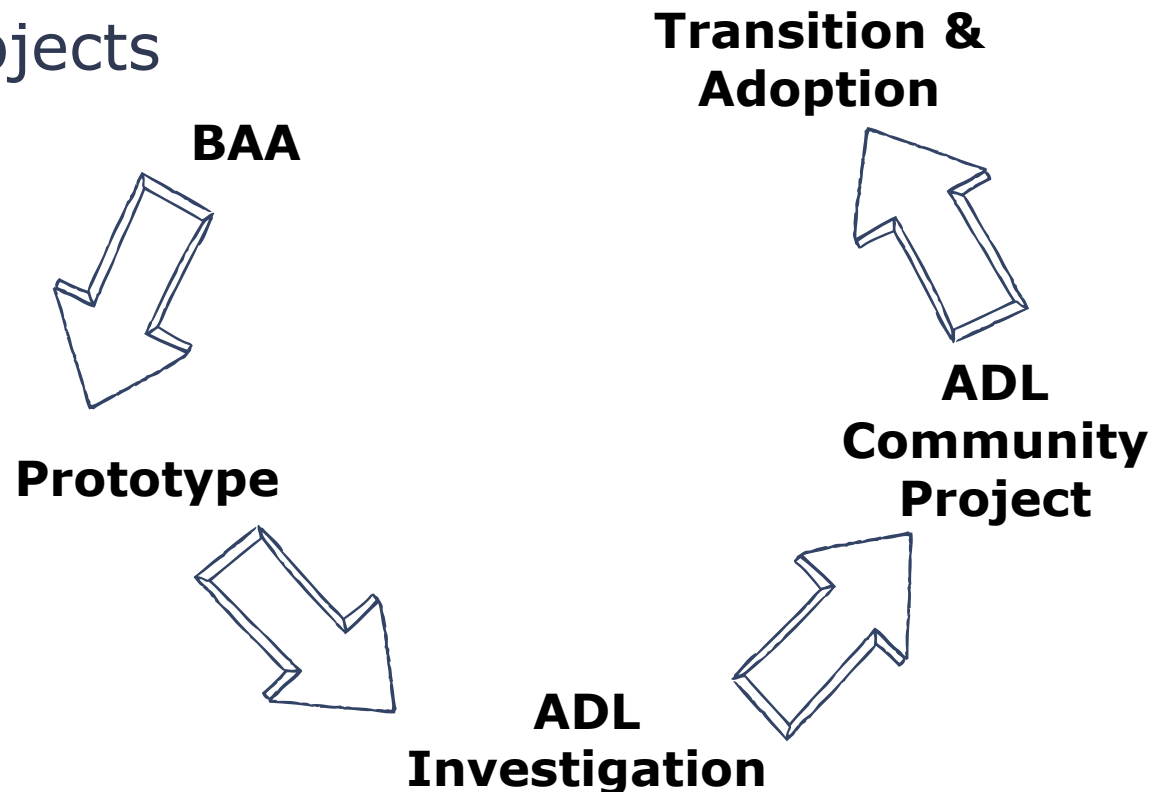
- **Security and Quality** – The more people who see the code, the more likely flaws will be caught and tested quickly
- **Freedom and Customizability** – With all of the code available, any custom updates can be made without vendor reliance
- **Auditability** – Visibility of code means that systems can be verified first-hand
- **Costs** – Licensing costs are low or free
- **Support Options** – Vibrant communities with forums, wikis, newsgroups, chat, etc.



TLA Component Lifecycle

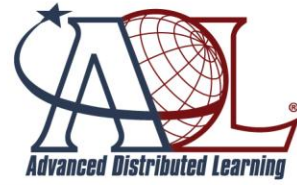


- ADL Broad Agency Announcement (BAA)
- ADL Internal Projects
- Community Projects





Training & Learning Architecture (TLA)

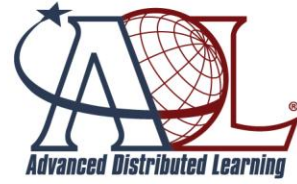


TLA

- **Experience Tracking**
- Content Brokering
- Learner Profiles
- Competency Networks



TLA Experience Tracking



Requirements

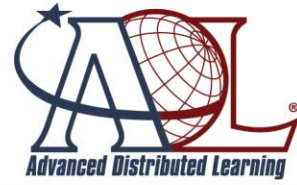
- Track learner data based on interactions with learning experiences
- Provide access to data after it is initially stored

Services and Specifications

- Project Tin Can Broad Agency Announcement (BAA)
- Experience Application Programming Interface (API)

Open Source Software

- ADL Open Source Learning Record Store (LRS)
- Experience API Examples
- Experience API Reusable Code Libraries

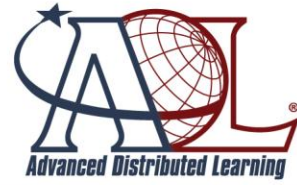


The Experience API (Tin Can API)

Web Service Specification & Open Source Examples

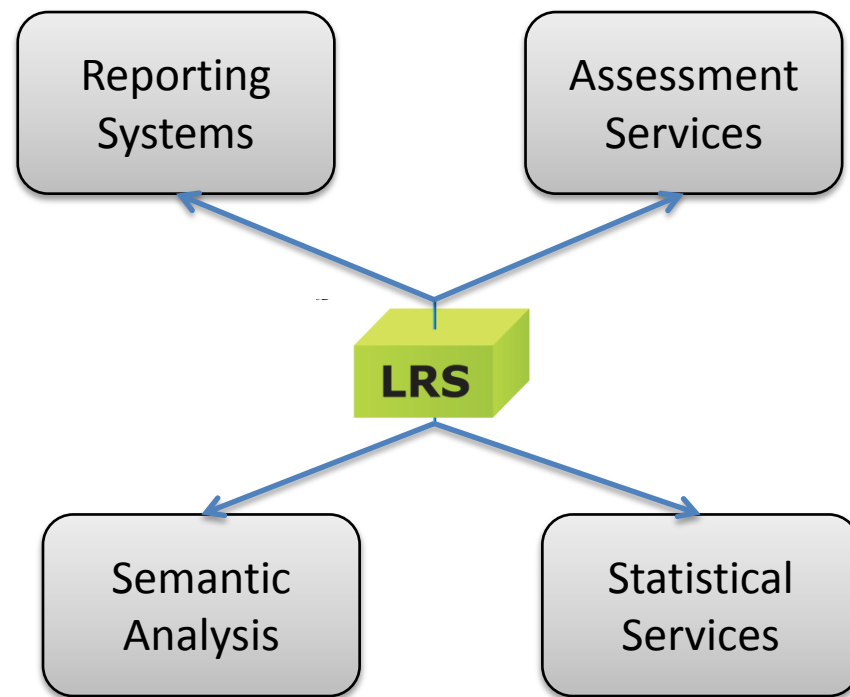
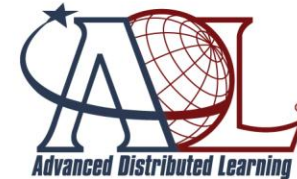


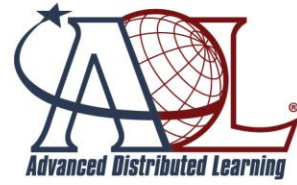
Track It





Act on It



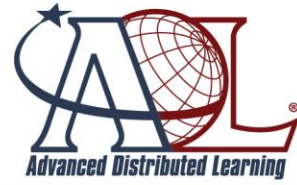


ADL Learning Record Store (LRS)

Open Source Software



What is an LRS?



Learning Management System (LMS)

User Management

Learning Records

Scheduling

Course Management

Statistics

Grade Book

Run-Time

Repository

Search

Player

Sequencing

Delivery

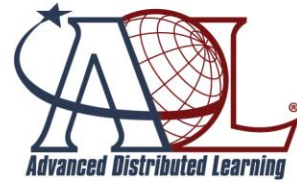
Preferences

Reports

Assessment



What is an LRS?

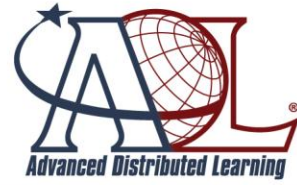


Learning Record Store (LRS)

Learning Records



Training & Learning Architecture (TLA)



TLA

- Experience Tracking
- **Content Brokering**
- Learner Profiles
- Competency Networks



TLA Content Brokering



Requirements

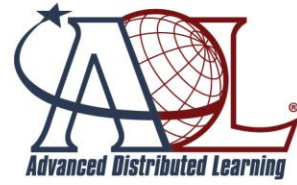
- Manage content to support just-in-time learning by enabling logical selections of the “next” logical activity
- Provides machines the ability to “understand” content for the purposes of selection and launch

Services and Specifications

- 3D Repository Federation Services

Open Source Software

- Re-Usability Support System for E-Learning (RUSSEL)
- Federal Learning Registry
- ADL 3D Repository

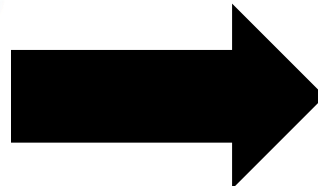
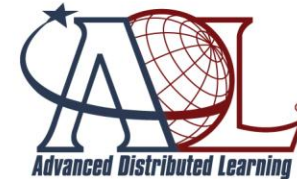


ADL 3D Repository (3DR)

Open Source Software

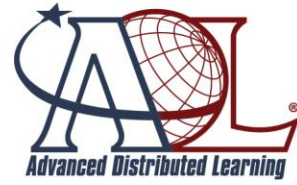


The Problem

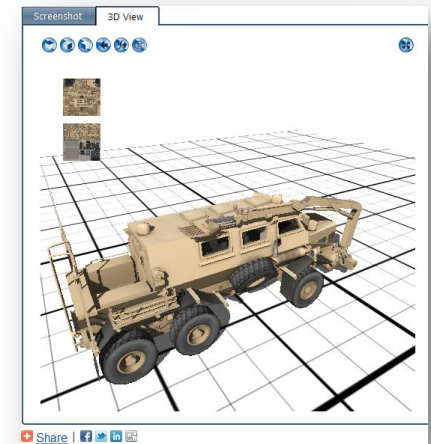


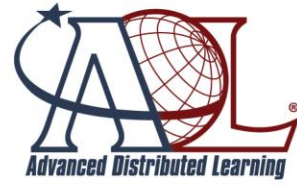


3DR Features



- Social media features
 - Ratings and reviews
- Upload and download
- File format conversion
- Automatic parsing of content for metadata
- Real-time previews
 - Using several technologies for browser support
- Permission management
 - Content owners can control access
- Federation
 - Any repository can join and publish objects





Re-Usability Support System for E-Learning (RUSSEL)

Open Source Software



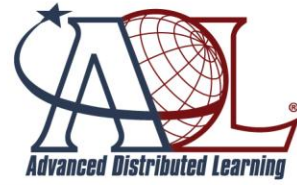
Goal



- Efficient development processes in an era of declining budgets
- Efficiency through reuse of existing learning materials



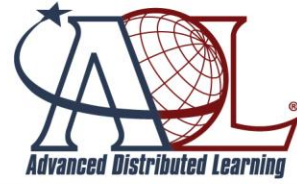
Role of Content Repositories



Type of System	Purpose
LMS	Delivery
LCMS	Centralized Authoring
Repository	Content Management
Registry	Discovery



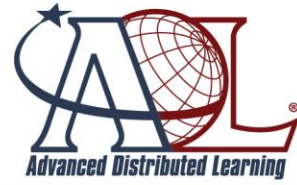
RUSSEL Objectives



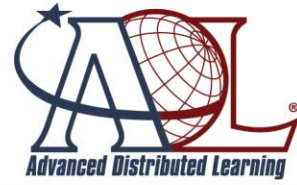
- **Out-of-the-box repository and digital library**
 - Manage and repurpose courses, documents, multimedia assets
 - Search and discover objects (locally and from other sources)
- **Make content more useful**
 - Create a rich metadata environment
 - Include ratings, analytics, and comments on usage
 - Support communities of practice and collaboration
- **Improve design and development of training**
 - Electronic performance support system (EPSS) for instructional design
 - Facilitate reuse and repurposing ("re-mixing")
 - Support all development environments and styles
 - Promote best practices



About the RUSSEL Project

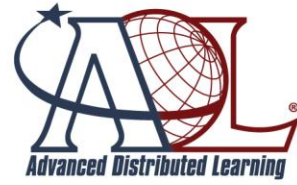


- Started: April 2012
- Final Delivery: March 2013
- Open Source Software
 - github.com/adlnet/RUSSEL
 - Extends an existing Open Source Content Management System



Federal Learning Registry (LR)

Specification and Open Source Software



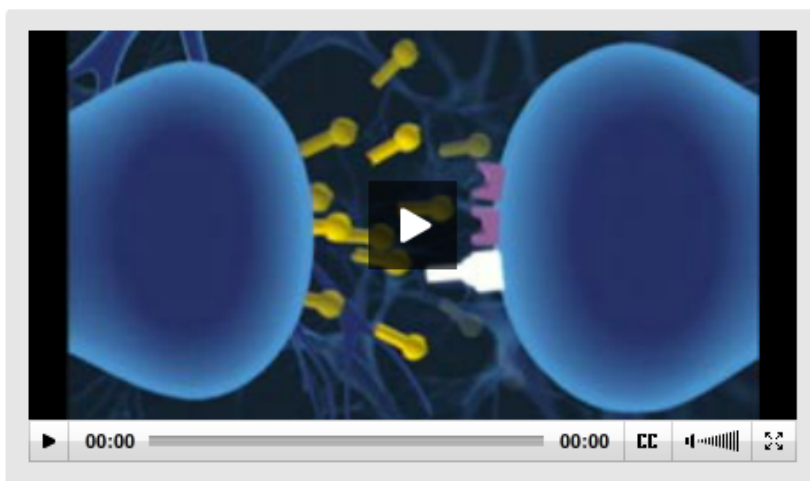
There is an Abundance of High Quality Learning Content



The Science Behind Appetite

Grades 5–12

NOVA



Duration: 4m 29s

Dimensions: 320px X 240px

Favorite

Like (1)

Share

This video segment, adapted from NOVA, documents a ballerina's experience with a potentially deadly eating disorder: anorexia nervosa. Research suggests that a brain chemical called serotonin plays a prominent role in regulating appetite—a key factor in eating disorders. The disruption of serotonin levels by dietary changes can lead to a vicious cycle that prolongs the disorder. By restoring nutrition to her diet, however, the dancer in the video is tackling her eating disorder and resuming her career.

Source: NOVA: "Dying to Be Thin"

This media segment was adapted from NOVA: "Dying to Be Thin"

Curriculum Topics

This resource is aligned to the following topics in the PBS LearningMedia curriculum framework.

- Health and Physical Education
 - Mental Illness
- Science
 - Basic Needs
 - Behavioral Response
 - Living Systems

Related Content



Body Needs

Grades 3–8
Interactive



The Role of Genetics in Obesity

Grades 6–12
Video

Lewis & Clark's Expedition to the Complex West

<http://docsteach.org/activities/77>

Start Activity ^

Author:
National Archives Education Team, Washington, DC

Tool:
[Mapping History](#)

Historical Era:
Expansion and Reform (1801-1861)

Primary Historical Thinking Skill:
Historical Analysis & Interpretation



Bloom's Taxonomy:
Analyzing

Use to Create an Activity +

[Print this activity](#) □



Synopsis

This activity can be used as an introduction or for a closer study of the Lewis & Clark Expedition. Students will learn that the United States purchased the Louisiana Territory in 1803 and President Thomas Jefferson sent Lewis and Clark to explore west of the Mississippi River in 1804, though the land was already inhabited and politically complicated. Students will analyze primary sources demonstrating various political interests in the West, including the Spanish, French, British, and those of several Native American groups, and place them on a historic map of the West (created for the centennial of the Louisiana Purchase). Students will explore and understand that



News

Missions

Images

Video & Audio

Education

Public Events

Work at JPL

About JPL

VIDEO & AUDIO

SUBSCRIBE AUDIO/VIDEO SUBSCRIBE HD EMAIL SHARE PRINT Text Size + -

IMAGES | VIDEOS | PODCASTS | INTERACTIVES | AUDIO

Videos

search video

submit

NOW PLAYING

Mars Rover Power

10.19.11

Curiosity is the biggest robot explorer ever to rove Mars. How do you power something like that?



current movie size:

44 mb | 640 x 360

> download

> captioned video

viewing options:

High Definition (HD)

124 mb | 1280 x 720

> play

> download

Standard Podcast

33 mb | 640 x 360

> download

HD Podcast

99 mb | 1280 x 720

> download

00:52 02:40 email share embed CC

Latest

Most Viewed

HD Videos

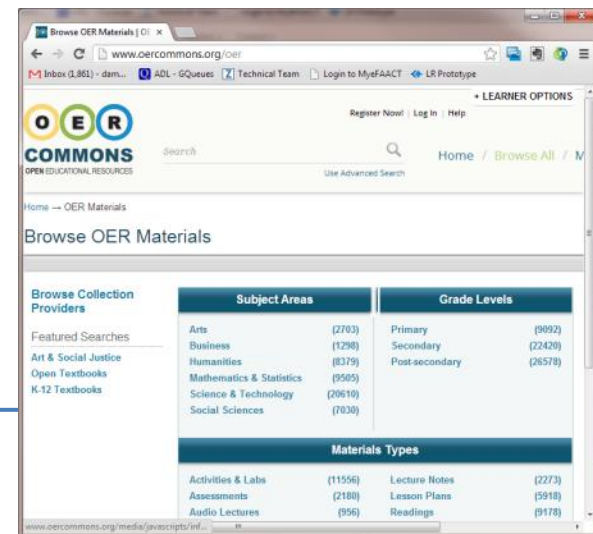
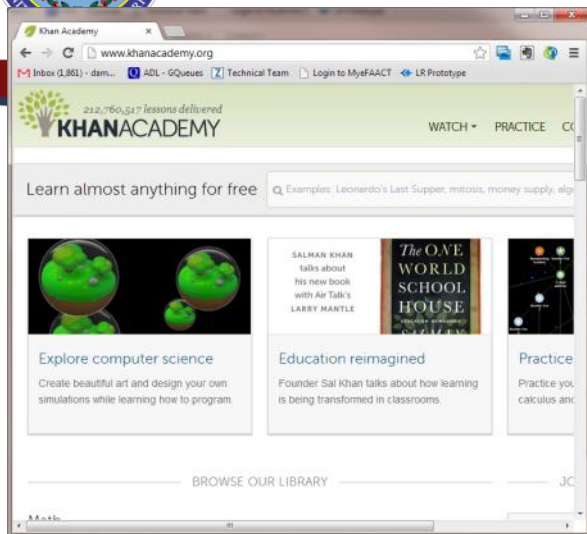
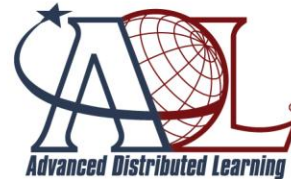
Animations

All Videos

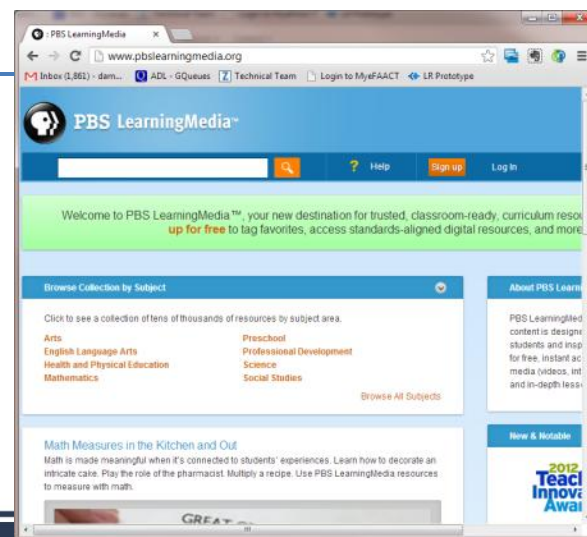
> online video catalog > image use policy

Our current situation:
Excellent learning materials at
Disparate places with
Too little time to find them



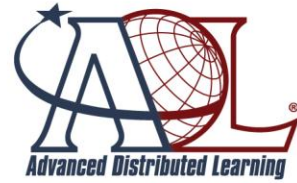


learning registry
sharing what we know





Sample of Learning Registry Today

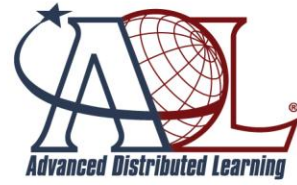


Publisher	Sample Resource	Quantity (approximate)
BetterLesson	Identity & Equalities Homework Sheet	24,000
Brokers of Expertise	Standards Matching	19,500
CPALMS	Differences between Climate & Weather	1,600
European Schoolnet	World War I Quiz	273,000
Federal Resources for Educational Excellence (FREE)	A Tour of the Cell	1,700
National Science Digital Library	Ask a Scientist!	102,000
OER Commons	Ratings Data	2,700

Learning Registry for State Decision Makers and Strategists



Training & Learning Architecture (TLA)

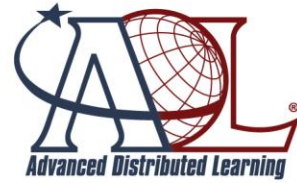


TLA

- Experience Tracking
- Content Brokering
- **Learner Profiles**
- Competency Networks



TLA Learner Profiles



Requirements

- Compile data about a learner to include previous course completions, competencies, preferences, learning style, and portfolios
- Provide access to profile information to be used to tailor learning experiences to an individual

Services and Specifications

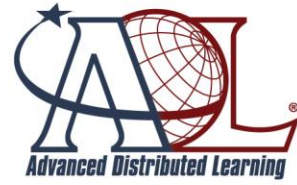
- TBD

Open Source Software

- TBD



Training & Learning Architecture (TLA)

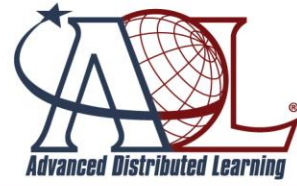


TLA

- Experience Tracking
- Content Brokering
- Learner Profiles
- **Competency Networks**



TLA Competency Networks



Requirements

- Establish a common way for content and systems to reference objectives and competencies
- Provide a means to represent a competency and competency relationships

Services and Specifications

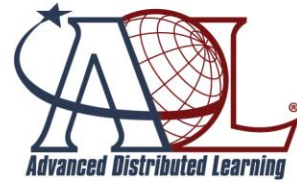
- TBD

Open Source Software

- TBD



Transitioning to TLA



- Each component contains a dedicated plan for transition from SCORM to TLA
- Best practices for updating content and systems will be created
- Software libraries and “wrappers” to ease the transition and minimize cost and resourcing impact will be created in an open source environment



Contact Us



Jonathan Poltrack

jonathan.poltrack.ctr@adlnet.gov

Twitter: @adljono

Dean Marvin

dean.marvin2@us.army.mil

Webinar Resources

www.adlnet.gov/looking-ahead-the-adl-initiative-in-2013-webinar